

## Characterization of CMOS based pH sensor

We are looking for student, who like to work in interdisciplinary teams and intend to realize master thesis within our group **Silicon Technologies and Devices at Fraunhofer EMFT**.

### Topic

In our daily life, sensors play an increasing role. Nowadays, determination of pH is of utmost importance in numerous scientific and industrial research areas: clinical, food or environmental milieu simply because pH level controls many chemical and biological reactions in aqueous medium.

Within this Master Work, the idea is to explore the sensing capability of **our innovative CMOS based pH sensor**, realized in our clean room facility.

Electrical characterization of pH sensor will lead to determine several parameters: **Sensitivity, Stability, working Range and response-recovery Speed**.

The main challenge of this masterwork is developing an understanding of the performance of **our innovative CMOS based pH sensor**.

### Work packages

- Topic familiarization and literature survey
- Deposition of various reference electrodes
- Electrical Characterization of the pH sensor
- Performance and reliability of the pH sensor
- Documentation and presentation of obtained results

### Requirements:

background in one of the following fields.

- Electrical Engineering, OR
- Physics, OR
- Material science of Physics, OR
- Materials Science.

### Time table

The thesis can be started immediately.

### Contact

For further information and application, please contact:

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The university supervision of the thesis will be done by the chair of circuit design at TUM